

REMARKS

This amendment is in response to the Office Action dated March 3, 2010. Claims 1 and 7 have been amended, no claims have been canceled, and no claims have been added; as such, claims 1-12 are now pending in this application. Claims 1 and 7 are independent claims. Reconsideration and allowance is requested in view of the claim amendments and the following remarks. These amendments add no new matter.

I. Priority Documents

It is noted with appreciation that the Office Action has acknowledged receipt of the claim for priority and the certified document supporting that claim.

II. Information Disclosure Statement

Applicant thanks the Examiner for providing initialed copies of form PTO/SB/08a/b, which were submitted by the Applicant on June 15, 2006, May 27, 2009, July 16, 2009 and September 19, 2009.

III. Specification

The disclosure is objected to because of following informalities: there is a typographical error at page 4, line 7. To expedite prosecution, Applicant has amended the disclosure accordingly, and respectfully requests withdrawal of the objection to the disclosure.

IV. 35 USC 112, 2nd ¶ Rejections

Claims 1-12 have been rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which the applicant regards as the invention.

Specifically, Claim 1 recites the limitations “the cross-sectional area of an air passage,” in lines 14-15 and “the cross-sectional area of the space of the housing,” in lines 16-17 without proper antecedent basis. Claims 1 and 7 recites two instances of the limitation “a space,” that render the claims unclear.

Applicant appreciates the Examiner's attention to this matter and appropriate amendments have been made. As such, Applicant requests withdrawal of the rejections of claims 1-12 under 35 U.S.C. 112, second paragraph.

V. 35 USC §§ 102(e) /103(a) Rejections

1. Claims 1-2 and 5 have been rejected under 35 U.S.C. § 102(e) as being as being anticipated by or, in the alternative, under 103 (a) as obvious over Spearman et al. (U.S. Patent 7,331,342, hereinafter referred to as "Spearman '342"). Applicant respectfully traverses this rejection.

a. Office Action Failed to Show That the Spearman Provisional Application Properly Supports the Subject Matter

Spearman '342 was filed on October 5, 2004. Applicant's claimed invention is entitled to benefit of the filing date of December 15, 2003 for Japanese Patent Application No. 2003-416308 and is entitled to benefit of the filing date of December 24, 2003 for Japanese Patent Application No. 2003-426457. However, the filing date for Spearman '342 of October 5, 2004 is *later than* either filing date for the Japanese Patent Applications of December 15, 2003 and December 24, 2003.

Spearman '342 appears to claim the benefit of provisional application No. 60/509115 (hereinafter referred to as the "Spearman Provisional Application"). The filing date for the Spearman Provisional Application of October 6, 2003 is *earlier than* the priority date for Applicant's Japanese Patent Applications of December 15, 2003 and December 24, 2003.

The 35 U.S.C. § 102(e) critical reference date of a U.S. patent or U.S. application publications and certain international application publications entitled to the benefit of the filing date of a provisional application under 35 U.S.C. 119(e) is the filing date of the provisional application with certain exceptions, *if the provisional application(s) properly supports the subject matter relied upon to make the rejection in compliance with 35 U.S.C. 112, first paragraph*. M.P.E.P. §2163.03(III).

Here, the Office Action relies upon col. 7, lines 1-7, lines 16-25 and lines 34-36 of Spearman '342 (Office Action at page 5). However, the Office Action has completely **failed to show** that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman '342 to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

b. Office Action Failed to Show That the Spearman '342 Discloses the Ratio of Cross-Sectional Areas from 0.1 to 0.7

The Examiner has stated in relation to claim 1 that “although not specifically addressed in the specification of Spearman, the ratio of cross-sectional areas based on Fig. 3 appears to be approximately 8/23, which is within the claimed range.” However, neither Fig. 3 of Spearman '342 nor Spearman provisional Application shows the ratio of cross-sectional areas of approximately 8/23 or the ratio of cross-sectional areas from 0.1 to 0.7 of the present invention.

There is a long standing tradition within U.S. patent practice that arguments based on the measurement of a drawing *are of little value absent any written description* in the specification of the quantitative values allegedly shown within the drawings. *In re Wright*, 193 USPQ 332, 335 (C.C.P.A. 1977). (Emphasis added.)

Apparently, the proportions shown in the drawing figure are merely the result of a draftsman's selection **rather than the embodiment of an intention to represent the device to scale**. *In re Ringel*, 36 USPQ 351, 353 (C.C.P.A. 1938). (Emphasis added.)

The specification of Spearman '342 is completely **silent** on the ratio of cross-sectional areas.

Drawings **do not** define the precise proportions of the elements and **may not** be relied on to show particular sizes *if the specification is completely silent* on the issue. *Hockerson-Halberstadt Inc. v. Avia Group International Inc.*, 55 USPQ2d 1487, 1491 (Fed. Cir. 2000). M.P.E.P. §§2125 (proportions of features in a drawing are not evidence of actual proportions when drawings are not drawn to scale). (Emphasis added.)

Further, the Examiner has stated that “the ratio of cross-sectional areas of 8/23 is considered as an obvious design choice.” However, FIG. 4 and statements in the specification thereabout demonstrate that Applicant’s claimed invention proved **the unexpected results** in providing effective humidify in an oxygen concentrated gas.

Applicant also demonstrates **the unexpected results** of the present invention in the Declaration attached hereto as Exhibit A (hereinafter referred to as the “Declaration A”). As described in the Declaration A, the humidifying device of the presently claimed invention can effectively humidify the gas with the damp air in atmospheric pressure; because the present invention has the following features (A) – (C):

Feature (A): Directing the gas to be humidified into the bores of hollow fibers.

Feature (B): Directing air through the space in the housing external of the hollow fibers by using a blowing means.

Feature (C): Setting the ration between the sum of cross-sectional areas of the hollow fibers and an air passage cross-sectional area within the range of 0.1 – 0.7.

Concretely speaking, in case of a humidifying device without feature (C) (Experiment 1 in the Declaration A), the humidifying device cannot humidify an oxygen concentrated gas in equal with relative humidity of a damp air in atmospheric pressure. In case of a humidifying device without features (A) and (B) (Experiment 2 in the Declaration A), the humidifying device cannot vanishingly humidify an oxygen concentrated gas. On the other hand, the humidifying device with feature (A), (B) and (C) of the present invention can effectively humidify an oxygen concentrated gas in equal with relative humidity of the damp air in atmospheric pressure, and is maintenance-free by using a blowing means of low noise and low power consumption type.

Therefore, Applicant does not believe that the feature of the ratio of cross-sectional areas from 0.1 to 0.7 of the present invention is a design choice.

Accordingly, Applicant respectfully requests that the rejection of claims 1-4 and 8-14 under 35 U.S.C. § 102(e) as being anticipated or, in the alternative, under § 103 (a) as obvious over Spearman '342 be withdrawn.

2. Claim 3 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Goel (U.S. Pub. No. 2004/0115489, hereinafter referred to as "Goel '489"). Applicant respectfully traverses this rejection.

As stated previously, the Office Action has **failed to show** that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

Goel '489 does not remedy the deficiencies of Spearman '342, since it has been shown that Spearman '342 is unavailable as prior art and as the various features claimed above are also absent from Goel '489.

Accordingly, Applicant respectfully requests that the rejection of claim 3 under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Goel '489 be withdrawn.

3. Claim 4 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Daniell (U.S. Patent 6,050,260, hereinafter referred to as "Daniell '260"). Applicant respectfully traverses this rejection.

As stated previously, the Office Action has **failed to show** that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

Daniell '260 does not remedy the deficiencies of Spearman '342, since it has been shown that Spearman '342 is unavailable as prior art and as the various features claimed above are also absent from Daniell '260.

Accordingly, Applicant respectfully requests that the rejection of claim 4 under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Daniell '260 be withdrawn.

4. Claim 6 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Izumi et al. (U.S. Patent 4,453,952, hereinafter referred to as "Izumi '952"). Applicant respectfully traverses this rejection.

As stated previously, the Office Action has **failed to show** that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

Izumi '952 does not remedy the deficiencies of Spearman '342, since it has been shown that Spearman '342 is unavailable as prior art and as the various features claimed above are also absent from Izumi '952.

Accordingly, Applicant respectfully requests that the rejection of claim 6 under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Izumi '952 be withdrawn.

5. Claims 7, 9 and 11 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez et al. (U.S. Patent 6,582,955, hereinafter referred to as "Martinez '955"). Applicant respectfully traverses this rejection.

As stated previously, the Office Action has **failed to show** that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

Martinez '955 does not remedy the deficiencies of Spearman '342, since it has been shown that Spearman '342 is unavailable as prior art and as the various features claimed above are also absent from Martinez '955.

Moreover, the Examiner has stated in relation to claim 7 that "Martinez teaches a bioreactor using a plurality of hollow fiber bundles (see column 2, lines 60-65)." Column 2, lines

60-65 of Martinez describes that “In the configuration using hollow fibers, the bioreactor is comprised of a plurality of two hollow fiber bundles, each said hollow fiber bundle interdependent of the other whereby *each individual hollow fiber*, comprising the plurality of hollow fibers in One bundle, *is disposed coaxially inside each hollow fiber of the other hollow fiber bundle.*” Therefore, Martinez discloses only a single hollow fiber bundle composed of a plurality of “dual tubes,” as shown in Fig. 5 of Martinez. This justifiably means that there is a space between outside fiber and inner fiber in a single hollow fiber bundle, but the space structurally does not communicate to a space in the housing external of the coaxial pairs of hollow fiber as shown in Fig. 28 of Martinez.

On the other hand, a single hollow fiber bundle of “a plurality of hollow fiber bundles” in the present invention is composed of a plurality of hollow fibers being orientated in a direction of predetermined axis in parallel, as shown in Figure 5 and 6 of the specification. Therefore, there is a space between each hollow fiber in the single hollow fiber bundle, and the space communicates to a space in the housing external of the hollow fiber bundle.

Consequently, Applicant does not believe that Martinez discloses or suggests the feature, i.e., “a plurality of hollow fiber bundles respectively formed by bundling a plurality of hollow fibers” and “an introduction port for the gas to be humidified, communicating to bores of the hollow fibers of the respective hollow fiber bundles, a discharging port for the gas to be humidified, communicating to bores of the hollow fibers of the respective hollow fiber bundles, an air inlet communicating to a space in the housing external of the hollow fibers to introduce atmospheric air, and an air exit communicating to the space in the housing external of the hollow fibers.”

Further, Applicant also demonstrates **the unexpected results** of the present invention in the Declaration attached hereto as Exhibit B (hereinafter referred to as the “Declaration B”). As described in the Declaration B, the experimental results demonstrate that a device including a plurality of hollow fiber bundles (Experiment 1 of the Declaration B) can **unexpectedly** humidify an oxygen concentrated gas more than a device including a single hollow fiber bundle having the same number of hollow fibers (Experiment 2 of the Declaration B). Needless to say, Martinez ‘955 structurally cannot exhibit such **unexpected results** as those exhibited in the present invention.

Therefore, Applicant does not believe that claim 7 is obvious from the disclosures of the cited references.

Accordingly, Applicant respectfully requests that the rejection of claims 7, 9 and 11 under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez '955 be withdrawn.

6. Claim 8 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez '955 and further in view of Goel '489. Applicant respectfully traverses this rejection.

As stated previously, the Office Action has failed to show that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

Neither Martinez '955 nor Goel '489 remedy the deficiencies of Spearman '342, since it has been shown that Spearman '342 is unavailable as prior art and as the various features claimed above are also absent from Martinez '955 or Goel '489.

Accordingly, Applicant respectfully requests that the rejection of claim 8 under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez '955 and further in view of Goel '489 be withdrawn.

7. Claim 10 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez '955 and further in view of Daniell '260. Applicant respectfully traverses this rejection.

As stated previously, the Office Action has failed to show that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

Neither Martinez '955 nor Daniell '260 remedy the deficiencies of Spearman '342, since it has been shown that Spearman '342 is unavailable as prior art and as the various features claimed above are also absent from Martinez '955 or Daniell '260.

Accordingly, Applicant respectfully requests that the rejection of claim 10 under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez '955 and further in view of Daniell '260 be withdrawn.

8. Claim 12 has been rejected under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez '955 and further in view of Izumi '952. Applicant respectfully traverses this rejection.

As stated previously, the Office Action has failed to show that the Spearman Provisional Application properly supports the subject matter within the Office Action relied upon within Spearman to make the rejection in compliance with 35 U.S.C. § 112, first paragraph.

Neither Martinez '955 nor Izumi '952 remedy the deficiencies of Spearman '342, since it has been shown that Spearman '342 is unavailable as prior art and as the various features claimed above are also absent from Martinez '955 or Izumi '952.

Accordingly, Applicant respectfully requests that the rejection of claim 12 under 35 U.S.C. § 103(a) as being unpatentable over Spearman '342 in view of Martinez '955 and further in view of Izumi '952 be withdrawn.

VI. Conclusion

In view of the above amendment and remarks, applicant believes the pending application is in condition for allowance.

This response is believed to be a complete response to the Office Action. However, Applicant reserves the right to set forth further arguments supporting the patentability of their claims, including the separate patentability of the dependent claims not explicitly addressed herein,

in future papers. Further, for any instances in which the Examiner took Official Notice in the Office Action, Applicant expressly does not acquiesce to the taking of Official Notice, and respectfully request that the Examiner provide an affidavit to support the Official Notice taken in the next Office Action, as required by 37 CFR 1.104(d)(2) and MPEP § 2144.03.

VII. Extensions of Time

Please treat any concurrent or future reply, requiring a petition for an extension of time under 37 C.F.R. §1.136, as incorporating a petition for extension of time for the appropriate length of time.

If any fee is required or any overpayment made, the Commissioner is hereby authorized to charge the fee or credit the overpayment to Deposit Account # 18-0013.

Dated: August 3, 2010

Respectfully submitted,

By 

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Attachments: Exhibit A: Declaration by Mr. Nozomu Tanihara

Exhibit B: Declaration by Mr. Nozomu Tanihara